

FIG. 1

FIG. 1 is a block diagram of a system 100. The system 100 includes a processor 110, I/O 140, I/O 150, display 160, and memory 120. The memory 120 includes ROM 122, RAM 124, GENERAL MEMORY 126, and LUT 128. The system 100 is connected to a bus 130 and a bus 200.

LUT 128		
TRUSTED DTD # 1	XML APP # 1	XML APP #1 STORAGE LOCATION
TRUSTED DTD # 2	XML APP # 2	XML APP # 2 STORAGE LOCATION
TRUSTED DTD # 3	XML APP # 3	XML APP # 3 STORAGE LOCATION

FIG. 2A

LUT 128			
TRUSTED DTD #1	DTD #1 STORAGE LOCATION	XML APP #1	XML APP #1 STORAGE LOCATION
TRUSTED DTD #2	DTD #2 STORAGE LOCATION	XML APP #2	XML APP #2 STORAGE LOCATION
TRUSTED DTD #3	DTD #3 STORAGE LOCATION	XML APP #3	XML APP #3 STORAGE LOCATION

FIG. 2B

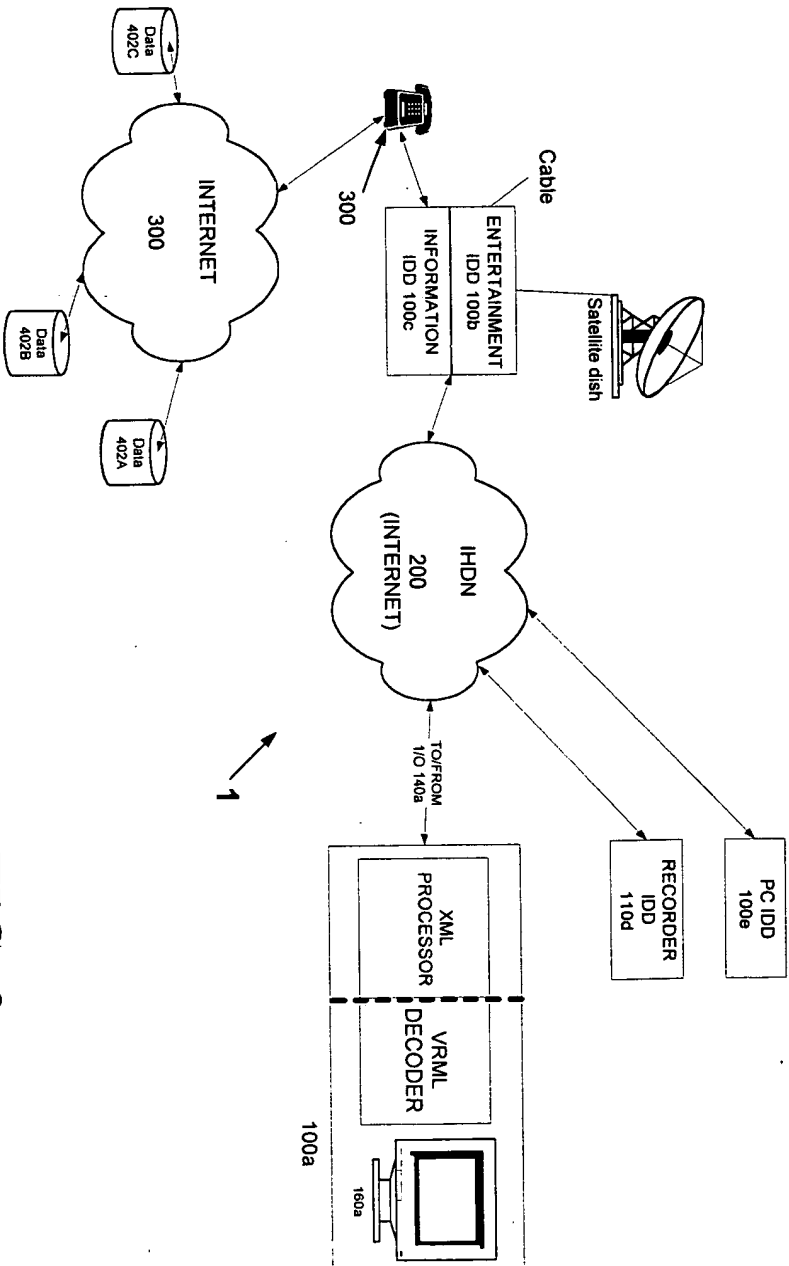


FIG. 3

FIG. 3 is a block diagram of a network architecture. The network architecture includes a PC 100e, a recorder 110d, an IHDN 200 (INTERNET), an entertainment information block 100b/100c, a cable, a satellite dish, a mobile device 300, an internet 300, data storage units 402a/402c, and a system block 100a containing an XML processor, a VRML decoder, and a monitor 160a. The IHDN 200 (INTERNET) is connected to the PC 100e, the recorder 110d, the entertainment information block 100b/100c, and the system block 100a. The entertainment information block 100b/100c is connected to the cable, the satellite dish, and the mobile device 300. The mobile device 300 is connected to the internet 300, which is connected to the data storage units 402a/402c.


```

<!-- DTD for a Simple TV Guide Application      R. Krasinski      1998.06.04 -->
<ELEMENT TVGuide - - (Date, TimeBlock)+>
<ELEMENT Date - - (#PCDATA)>
<ELEMENT TimeBlock - - (channel)+>
<!ATTLIST Block CDATA      #REQUIRED >
<ELEMENT channel - - (definition, Entry)+>
<ELEMENT definition - - (number, name, channel-type)>
<ELEMENT Entry - - (Time-slot, program)+>
<ELEMENT Time-slot - - (start-time, end-time)>
<ELEMENT program - - ((movie | series-episode | sport | talk | news | cartoon), parental-rating))>
<ELEMENT movie - - (title, description, program-type, program-subtype, running-time, review-rating,
language, release-year, MPAA-rating, players)>
<!-- ELEMENT players - - (director, producer, actor*)>
<!-- ELEMENT actor - - (guild-name, award)>
<!-- ELEMENT producer - - (person-name, award)>
<!-- ELEMENT director - - (guild-name, award)>
<!-- ELEMENT parental-rating - - (#PCDATA)>
<!-- ELEMENT number - - (#PCDATA)>
<!-- ELEMENT name - - (#PCDATA)>
<!-- ELEMENT channel-type - - (#PCDATA)>
<!-- ELEMENT start-time - - (#PCDATA)>
<!-- ELEMENT end-time - - (#PCDATA)>
<!-- ELEMENT title - - (#PCDATA)>
<!-- ELEMENT description - - (#PCDATA)>
<!-- ELEMENT program-type - - (#PCDATA)>
<!-- ELEMENT program-subtype - - (#PCDATA)>
<!-- ELEMENT running-time - - (#PCDATA)>
<!-- ELEMENT review-rating - - (#PCDATA)>
<!-- ELEMENT language - - (#PCDATA)>
<!-- ELEMENT release-year - - (#PCDATA)>
<!-- ELEMENT MPAA-rating - - (#PCDATA)>
<!-- ELEMENT guild-name - - (#PCDATA)>
<!-- ELEMENT person-name - - (#PCDATA)>
<!-- ELEMENT award - - (#PCDATA)>

```

FIG. 5



Categories:

III

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1134

46

25

511



11 00:11 05:01 00:11

5:00 6:30 9:00 4:30 10:00 10:30

4. 10 100 200 300 400 500 600 700 800 900 1000

[illegible]

Figure 1. The effect of the number of trials on the mean number of correct responses for the 100% condition. The number of trials was 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 120, 140, 160, 180, 200, 220, 240, 260, 280, 300, 320, 340, 360, 380, 400, 420, 440, 460, 480, 500, 520, 540, 560, 580, 600, 620, 640, 660, 680, 700, 720, 740, 760, 780, 800, 820, 840, 860, 880, 900, 920, 940, 960, 980, 1000, 1020, 1040, 1060, 1080, 1100, 1120, 1140, 1160, 1180, 1200, 1220, 1240, 1260, 1280, 1300, 1320, 1340, 1360, 1380, 1400, 1420, 1440, 1460, 1480, 1500, 1520, 1540, 1560, 1580, 1600, 1620, 1640, 1660, 1680, 1700, 1720, 1740, 1760, 1780, 1800, 1820, 1840, 1860, 1880, 1900, 1920, 1940, 1960, 1980, 2000, 2020, 2040, 2060, 2080, 2100, 2120, 2140, 2160, 2180, 2200, 2220, 2240, 2260, 2280, 2300, 2320, 2340, 2360, 2380, 2400, 2420, 2440, 2460, 2480, 2500, 2520, 2540, 2560, 2580, 2600, 2620, 2640, 2660, 2680, 2700, 2720, 2740, 2760, 2780, 2800, 2820, 2840, 2860, 2880, 2900, 2920, 2940, 2960, 2980, 3000, 3020, 3040, 3060, 3080, 3100, 3120, 3140, 3160, 3180, 3200, 3220, 3240, 3260, 3280, 3300, 3320, 3340, 3360, 3380, 3400, 3420, 3440, 3460, 3480, 3500, 3520, 3540, 3560, 3580, 3600, 3620, 3640, 3660, 3680, 3700, 3720, 3740, 3760, 3780, 3800, 3820, 3840, 3860, 3880, 3900, 3920, 3940, 3960, 3980, 4000, 4020, 4040, 4060, 4080, 4100, 4120, 4140, 4160, 4180, 4200, 4220, 4240, 4260, 4280, 4300, 4320, 4340, 4360, 4380, 4400, 4420, 4440, 4460, 4480, 4500, 4520, 4540, 4560, 4580, 4600, 4620, 4640, 4660, 4680, 4700, 4720, 4740, 4760, 4780, 4800, 4820, 4840, 4860, 4880, 4900, 4920, 4940, 4960, 4980, 5000, 5020, 5040, 5060, 5080, 5100, 5120, 5140, 5160, 5180, 5200, 5220, 5240, 5260, 5280, 5300, 5320, 5340, 5360, 5380, 5400, 5420, 5440, 5460, 5480, 5500, 5520, 5540, 5560, 5580, 5600, 5620, 5640, 5660, 5680, 5700, 5720, 5740, 5760, 5780, 5800, 5820, 5840, 5860, 5880, 5900, 5920, 5940, 5960, 5980, 6000, 6020, 6040, 6060, 6080, 6100, 6120, 6140, 6160, 6180, 6200, 6220, 6240, 6260, 6280, 6300, 6320, 6340, 6360, 6380, 6400, 6420, 6440, 6460, 6480, 6500, 6520, 6540, 6560, 6580, 6600, 6620, 6640, 6660, 6680, 6700, 6720, 6740, 6760, 6780, 6800, 6820, 6840, 6860, 6880, 6900, 6920, 6940, 6960, 6980, 7000, 7020, 7040, 7060, 7080, 7100, 7120, 7140, 7160, 7180, 7200, 7220, 7240, 7260, 7280, 7300, 7320, 7340, 7360, 7380, 7400, 7420, 7440, 7460, 7480, 7500, 7520, 7540, 7560, 7580, 7600, 7620, 7640, 7660, 7680, 7700, 7720, 7740, 7760, 7780, 7800, 7820, 7840, 7860, 7880, 7900, 7920, 7940, 7960, 7980, 8000, 8020, 8040, 8060, 8080, 8100, 8120, 8140, 8160, 8180, 8200, 8220, 8240, 8260, 8280, 8300, 8320, 8340, 8360, 8380, 8400, 8420, 8440, 8460, 8480, 8500, 8520, 8540, 8560, 8580, 8600, 8620, 8640, 8660, 8680, 8700, 8720, 8740, 8760, 8780, 8800, 8820, 8840, 8860, 8880, 8900, 8920, 8940, 8960, 8980, 9000, 9020, 9040, 9060, 9080, 9100, 9120, 9140, 9160, 9180, 9200, 9220, 9240, 9260, 9280, 9300, 9320, 9340, 9360, 9380, 9400, 9420, 9440, 9460, 9480, 9500, 9520, 9540, 9560, 9580, 9600, 9620, 9640, 9660, 9680, 9700, 9720, 9740, 9760, 9780, 9800, 9820, 9840, 9860, 9880, 9900, 9920, 9940, 9960, 9980, 10000. The number of trials was 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 120, 140, 160, 180, 200, 220, 240, 260, 280, 300, 320, 340, 360, 380, 400, 420, 440, 460, 480, 500, 520, 540, 560, 580, 600, 620, 640, 660, 680, 700, 720, 740, 760, 780, 800, 820, 840, 860, 880, 900, 920, 940, 960, 980, 1000, 1020, 1040, 1060, 1080, 1100, 1120, 1140, 1160, 1180, 1200, 1220, 1240, 1260, 1280, 1300, 1320, 1340, 1360, 1380, 1400, 1420, 1440, 1460, 1480, 1500, 1520, 1540, 1560, 1580, 1600, 1620, 1640, 1660, 1680, 1700, 1720, 1740, 1760, 1780, 1800, 1820, 1840, 1860, 1880, 1900, 1920, 1940, 1960, 1980, 2000, 2020, 2040, 2060, 2080, 2100, 2120, 2140, 2160, 2180, 2200, 2220, 2240, 2260, 2280, 2300, 2320, 2340, 2360, 2380, 2400, 2420, 2440, 2460, 2480, 2500, 2520, 2540, 2560, 2580, 2600, 2620, 2640, 2660, 2680, 2700, 2720, 2740, 2760, 2780, 2800, 2820, 2840, 2860, 2880, 2900, 2920, 2940, 2960, 2980, 3000, 3020, 3040, 3060, 3080, 3100, 3120, 3140, 3160, 3180, 3200, 3220, 3240, 3260, 3280, 3300, 3320, 3340, 3360, 3380, 3400, 3420, 3440, 3460, 3480, 3500, 3520, 3540, 3560, 3580, 3600, 3620, 3640, 3660, 3680, 3700, 3720, 3740,



1. *Chlorophyll a* (Chl *a*)
 2. *Chlorophyll b* (Chl *b*)
 3. *Chlorophyll c* (Chl *c*)
 4. *Chlorophyll d* (Chl *d*)
 5. *Chlorophyll e* (Chl *e*)
 6. *Chlorophyll f* (Chl *f*)
 7. *Chlorophyll g* (Chl *g*)
 8. *Chlorophyll h* (Chl *h*)
 9. *Chlorophyll i* (Chl *i*)
 10. *Chlorophyll j* (Chl *j*)
 11. *Chlorophyll k* (Chl *k*)
 12. *Chlorophyll l* (Chl *l*)
 13. *Chlorophyll m* (Chl *m*)
 14. *Chlorophyll n* (Chl *n*)
 15. *Chlorophyll o* (Chl *o*)
 16. *Chlorophyll p* (Chl *p*)
 17. *Chlorophyll q* (Chl *q*)
 18. *Chlorophyll r* (Chl *r*)
 19. *Chlorophyll s* (Chl *s*)
 20. *Chlorophyll t* (Chl *t*)
 21. *Chlorophyll u* (Chl *u*)
 22. *Chlorophyll v* (Chl *v*)
 23. *Chlorophyll w* (Chl *w*)
 24. *Chlorophyll x* (Chl *x*)
 25. *Chlorophyll y* (Chl *y*)
 26. *Chlorophyll z* (Chl *z*)
 27. *Chlorophyll aa* (Chl *aa*)
 28. *Chlorophyll ab* (Chl *ab*)
 29. *Chlorophyll ac* (Chl *ac*)
 30. *Chlorophyll ad* (Chl *ad*)
 31. *Chlorophyll ae* (Chl *ae*)
 32. *Chlorophyll af* (Chl *af*)
 33. *Chlorophyll ag* (Chl *ag*)
 34. *Chlorophyll ah* (Chl *ah*)
 35. *Chlorophyll ai* (Chl *ai*)
 36. *Chlorophyll aj* (Chl *aj*)
 37. *Chlorophyll ak* (Chl *ak*)
 38. *Chlorophyll al* (Chl *al*)
 39. *Chlorophyll am* (Chl *am*)
 40. *Chlorophyll an* (Chl *an*)
 41. *Chlorophyll ao* (Chl *ao*)
 42. *Chlorophyll ap* (Chl *ap*)
 43. *Chlorophyll aq* (Chl *aq*)
 44. *Chlorophyll ar* (Chl *ar*)
 45. *Chlorophyll as* (Chl *as*)
 46. *Chlorophyll at* (Chl *at*)
 47. *Chlorophyll au* (Chl *au*)
 48. *Chlorophyll av* (Chl *av*)
 49. *Chlorophyll aw* (Chl *aw*)
 50. *Chlorophyll ax* (Chl *ax*)
 51. *Chlorophyll ay* (Chl *ay*)
 52. *Chlorophyll az* (Chl *az*)
 53. *Chlorophyll aza* (Chl *aza*)
 54. *Chlorophyll abz* (Chl *abz*)
 55. *Chlorophyll acz* (Chl *acz*)
 56. *Chlorophyll adz* (Chl *adz*)
 57. *Chlorophyll aez* (Chl *aez*)
 58. *Chlorophyll afz* (Chl *afz*)
 59. *Chlorophyll agz* (Chl *agz*)
 60. *Chlorophyll ahz* (Chl *ahz*)
 61. *Chlorophyll aiz* (Chl *aiz*)
 62. *Chlorophyll ajz* (Chl *ajz*)
 63. *Chlorophyll akz* (Chl *akz*)
 64. *Chlorophyll alz* (Chl *alz*)
 65. *Chlorophyll amz* (Chl *amz*)
 66. *Chlorophyll anz* (Chl *anz*)
 67. *Chlorophyll aoz* (Chl *aoz*)
 68. *Chlorophyll apz* (Chl *apz*)
 69. *Chlorophyll aqz* (Chl *aqz*)
 70. *Chlorophyll arz* (Chl *arz*)
 71. *Chlorophyll asz* (Chl *asz*)
 72. *Chlorophyll atz* (Chl *atz*)
 73. *Chlorophyll auz* (Chl *auz*)
 74. *Chlorophyll avz* (Chl *avz*)
 75. *Chlorophyll awz* (Chl *awz*)
 76. *Chlorophyll axz* (Chl *axz*)
 77. *Chlorophyll ayz* (Chl *ayz*)
 78. *Chlorophyll azz* (Chl *azz*)
 79. *Chlorophyll azaa* (Chl *aza*
 80. *Chlorophyll abz* (Chl *abz*)
 81. *Chlorophyll acz* (Chl *acz*)
 82. *Chlorophyll adz* (Chl *adz*)
 83. *Chlorophyll aez* (Chl *aez*)
 84. *Chlorophyll afz* (Chl *afz*)
 85. *Chlorophyll agz* (Chl *agz*)
 86. *Chlorophyll ahz* (Chl *ahz*)
 87. *Chlorophyll aiz* (Chl *aiz*)
 88. *Chlorophyll ajz* (Chl *ajz*)
 89. *Chlorophyll akz* (Chl *akz*)
 90. *Chlorophyll alz* (Chl *alz*)
 91. *Chlorophyll amz* (Chl *amz*)
 92. *Chlorophyll anz* (Chl *anz*)
 93. *Chlorophyll aoz* (Chl *aoz*)
 94. *Chlorophyll apz* (Chl *apz*)
 95. *Chlorophyll aqz* (Chl *aqz*)
 96. *Chlorophyll arz* (Chl *arz*)
 97. *Chlorophyll asz* (Chl *asz*)
 98. *Chlorophyll atz* (Chl *atz*)
 99. *Chlorophyll auz* (Chl *auz*)
 100. *Chlorophyll avz* (Chl *avz*)
 101. *Chlorophyll awz* (Chl *awz*)
 102. *Chlorophyll axz* (Chl *axz*)
 103. *Chlorophyll ayz* (Chl *ayz*)
 104. *Chlorophyll azz* (Chl *azz*)
 105. *Chlorophyll azaa* (Chl *aza*
 106. *Chlorophyll abz* (Chl *abz*)
 107. *Chlorophyll acz* (Chl *acz*)
 108. *Chlorophyll adz* (Chl *adz*)
 109. *Chlorophyll aez* (Chl *aez*)
 110. *Chlorophyll afz* (Chl *afz*)
 111. *Chlorophyll agz* (Chl *agz*)
 112. *Chlorophyll ahz* (Chl *ahz*)
 113. *Chlorophyll aiz* (Chl *aiz*)
 114. *Chlorophyll ajz* (Chl *ajz*)
 115. *Chlorophyll akz* (Chl *akz*)
 116. *Chlorophyll alz* (Chl *alz*)
 117. *Chlorophyll amz* (Chl *amz*)
 118. *Chlorophyll anz* (Chl *anz*)
 119. *Chlorophyll aoz* (Chl *aoz*)
 120. *Chlorophyll apz* (Chl *apz*)
 121. *Chlorophyll aqz* (Chl *aqz*)
 122. *Chlorophyll arz* (Chl *arz*)
 123. *Chlorophyll asz* (Chl *asz*)
 124. *Chlorophyll atz* (Chl *atz*)
 125. *Chlorophyll auz* (Chl *auz*)
 126. *Chlorophyll avz* (Chl *avz*)
 127. *Chlorophyll awz* (Chl *awz*)
 128. *Chlorophyll axz* (Chl *axz*)
 129. *Chlorophyll ayz* (Chl *ayz*)
 130. *Chlorophyll azz* (Chl *azz*)
 131. *Chlorophyll azaa* (Chl *aza*
 132. *Chlorophyll abz* (Chl *abz*)
 133. *Chlor*

[illegible]

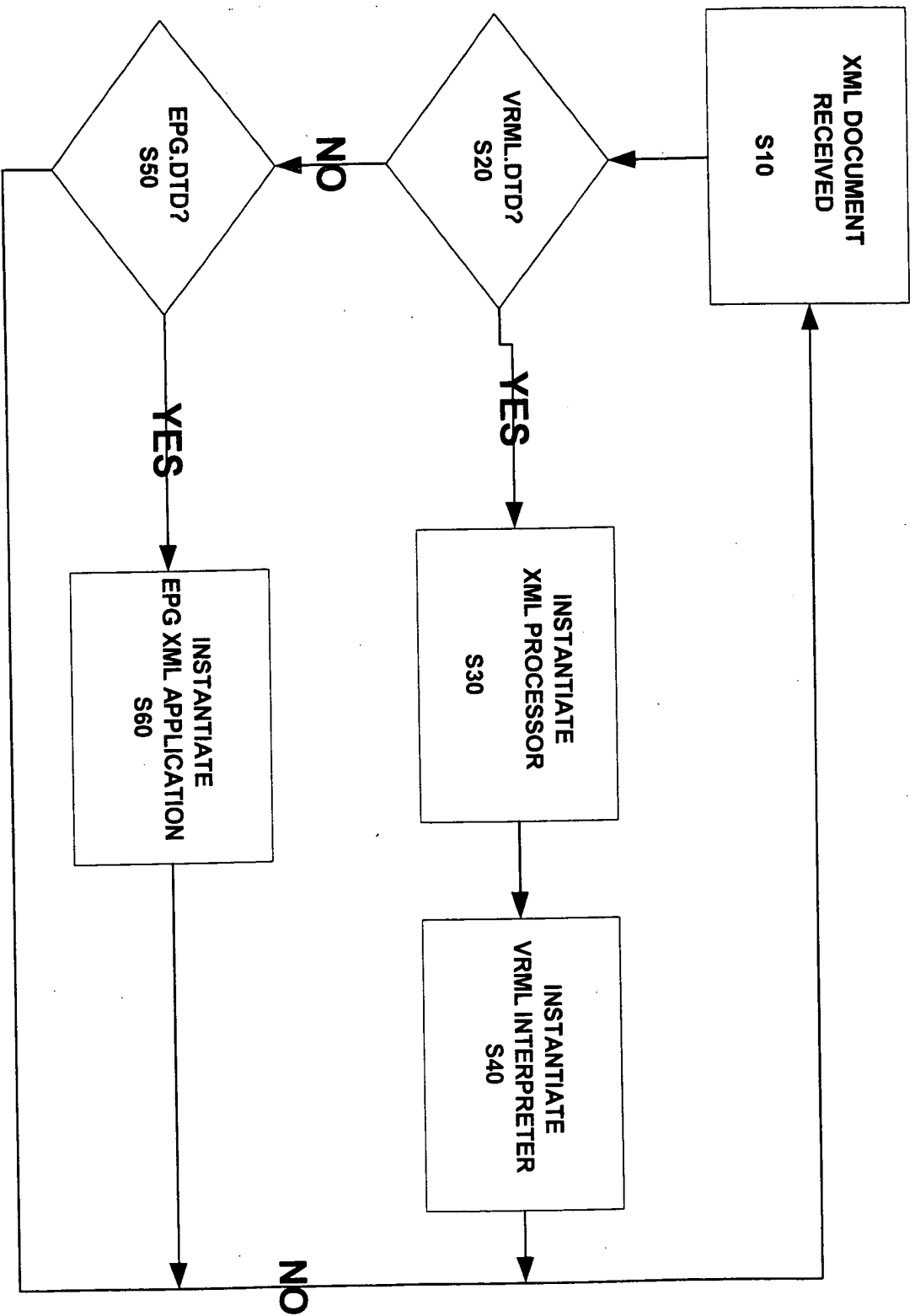


FIG. 7

FIG. 7 is a flowchart illustrating a process for handling an XML document. The process begins at step S10, "XML DOCUMENT RECEIVED". A decision is made at step S20, "VRML.DTD?". If the answer is "YES", the process proceeds to step S30, "INSTANTIATE XML PROCESSOR", and then to step S40, "INSTANTIATE VRML INTERPRETER". If the answer is "NO", the process proceeds to step S50, "EPG.DTD?". If the answer is "YES", the process proceeds to step S60, "INSTANTIATE EPG XML APPLICATION". Both paths (from S40 and S60) lead to a common point that loops back to step S10.

```

<!-- DTD for a Simple TV Guide Application      R. Krasinski      1998.06.04 -->
<ELEMENT TVGuide - - (Date, TimeBlock+)>
<ELEMENT Date - - (#PCDATA)>
<ELEMENT TimeBlock - - (channel)+>
<!ATTLIST Block CDATA      #REQUIRED >
<ELEMENT channel - - (definition, Entry+)>
<ELEMENT definition - - (number, name, channel-type)>
<ELEMENT Entry - - (Time-slot, program)+>
<ELEMENT Time-slot - - (start-time, end-time)>
<ELEMENT program - - ((movie | series-episode | sport | talk | news | cartoon), parental-rating))>
<ELEMENT movie - - (title, description, program-type, program-subtype, running-time, review-rating,
language, release-year, MPAA-rating, players)>
<ELEMENT players - - (director, producer, actor*)>
<ELEMENT actor - - (guild-name, award)>
<ELEMENT producer - - (person-name, award)>
<ELEMENT director - - (guild-name, award)>
<ELEMENT parental-rating - - (#PCDATA)>
<ELEMENT number - - (#PCDATA)>
<ELEMENT name - - (#PCDATA)>
<ELEMENT channel-type - - (#PCDATA)>
<ELEMENT start-time - - (#PCDATA)>
<ELEMENT end-time - - (#PCDATA)>
<ELEMENT title - - (#PCDATA)>
<ELEMENT description - - (#PCDATA)>
<ELEMENT program-type - - (#PCDATA)>
<ELEMENT program-subtype - - (#PCDATA)>
<ELEMENT running-time - - (#PCDATA)>
<ELEMENT review-rating - - (#PCDATA)>
<ELEMENT language - - (#PCDATA)>
<ELEMENT release-year - - (#PCDATA)>
<ELEMENT MPAA-rating - - (#PCDATA)>
<ELEMENT guild-name - - (#PCDATA)>
<ELEMENT person-name - - (#PCDATA)>
<ELEMENT award - - (#PCDATA)>

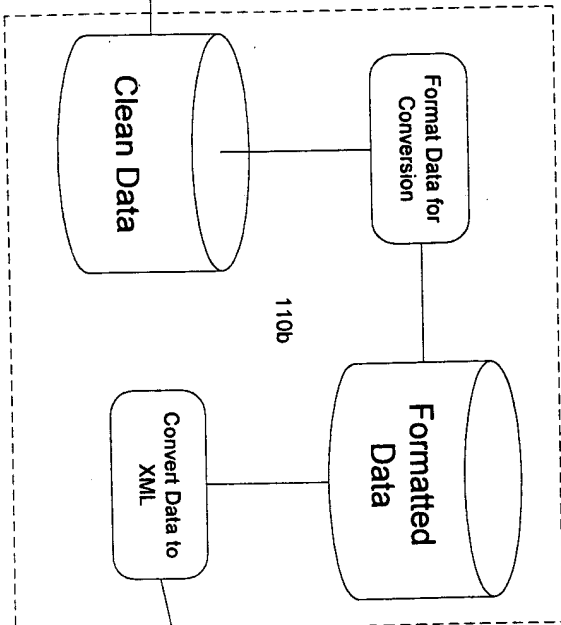
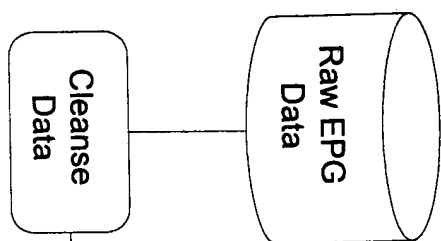
```

FIG. 8

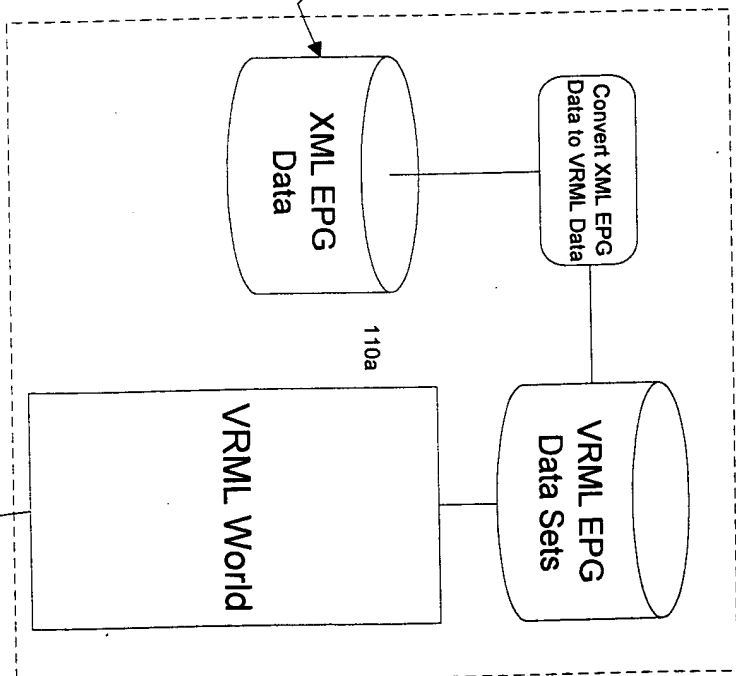
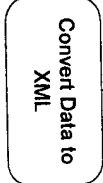
FROM CABLE SYSTEM

100b

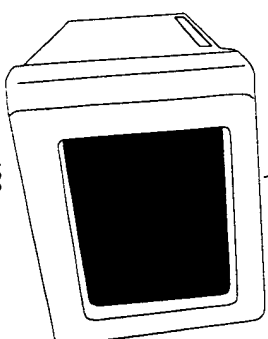
100a



110b



110a



160a

FIG. 9

FIG. 9 is a block diagram of a system for processing EPG data from a cable system. The system includes a cable system (100b) that provides raw EPG data to a cleanse data block (110b). The cleanse data block (110b) outputs clean data to a format data for conversion block (110a). The format data for conversion block (110a) outputs formatted data to a convert data to XML block (110a). The convert data to XML block (110a) outputs XML EPG data to a convert XML EPG data to VRML data block (110a). The convert XML EPG data to VRML data block (110a) outputs VRML EPG data sets to a VRML world block (160a). The VRML world block (160a) is connected to a VRML world interface (160a).